

Figure 1

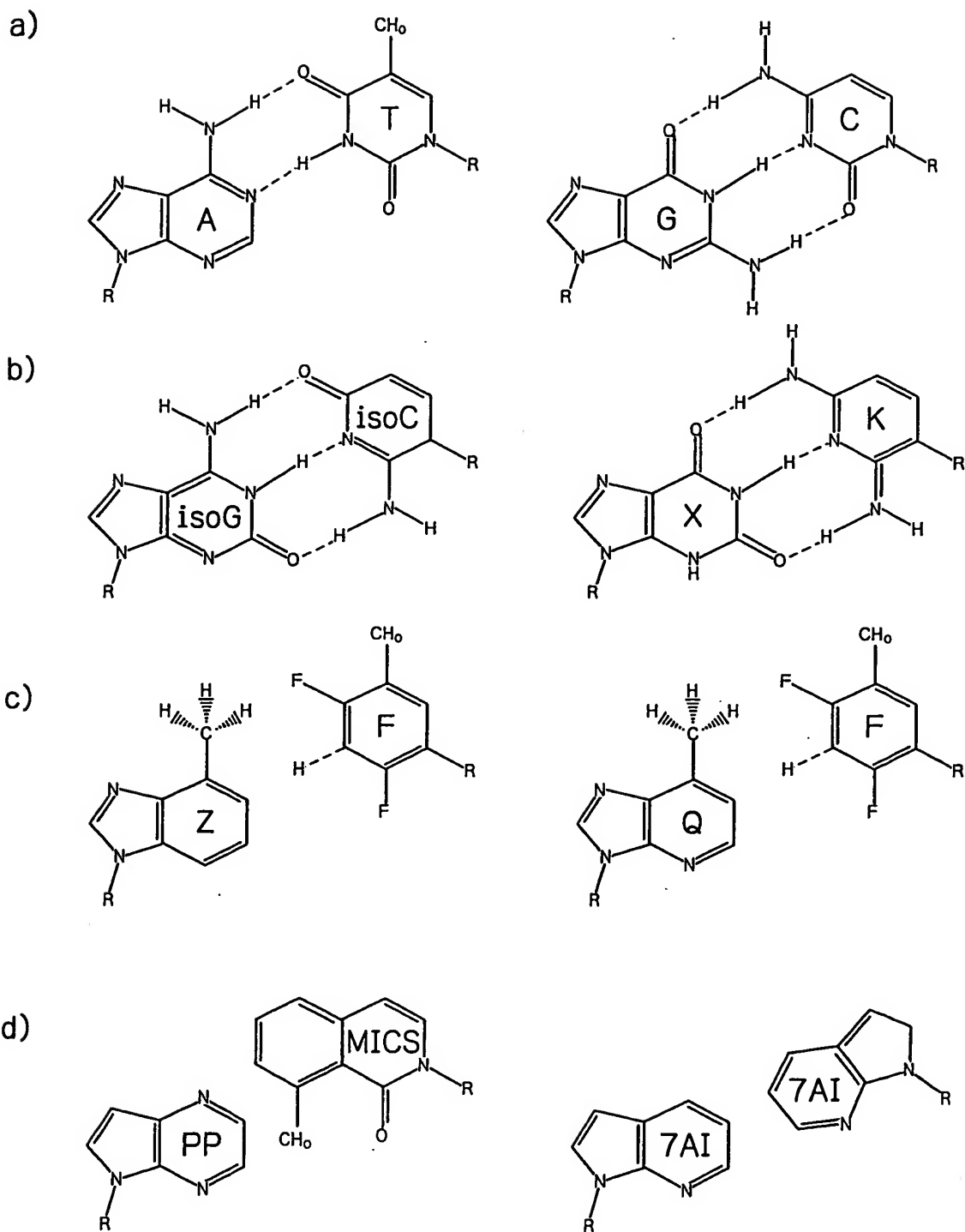


Figure 2

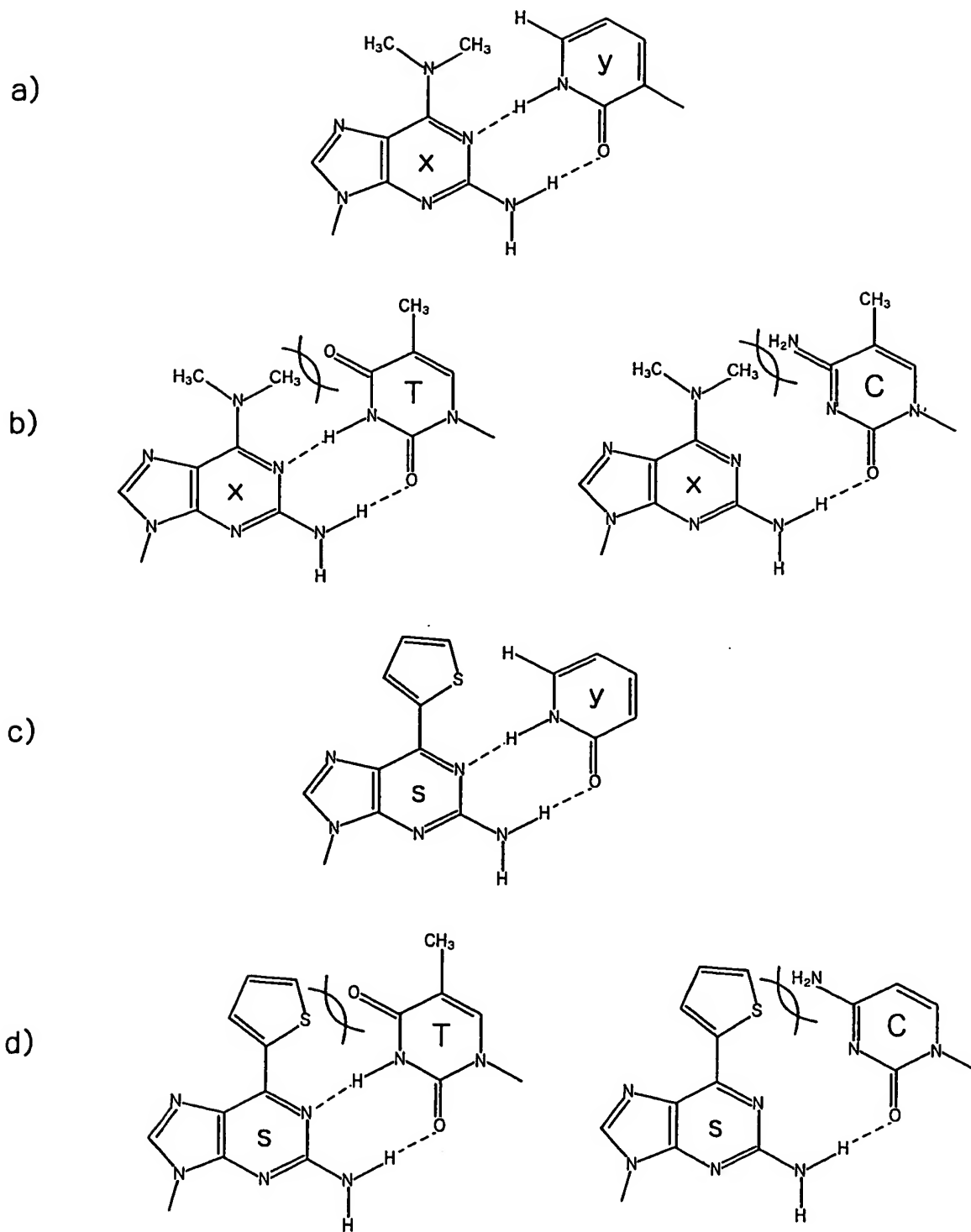
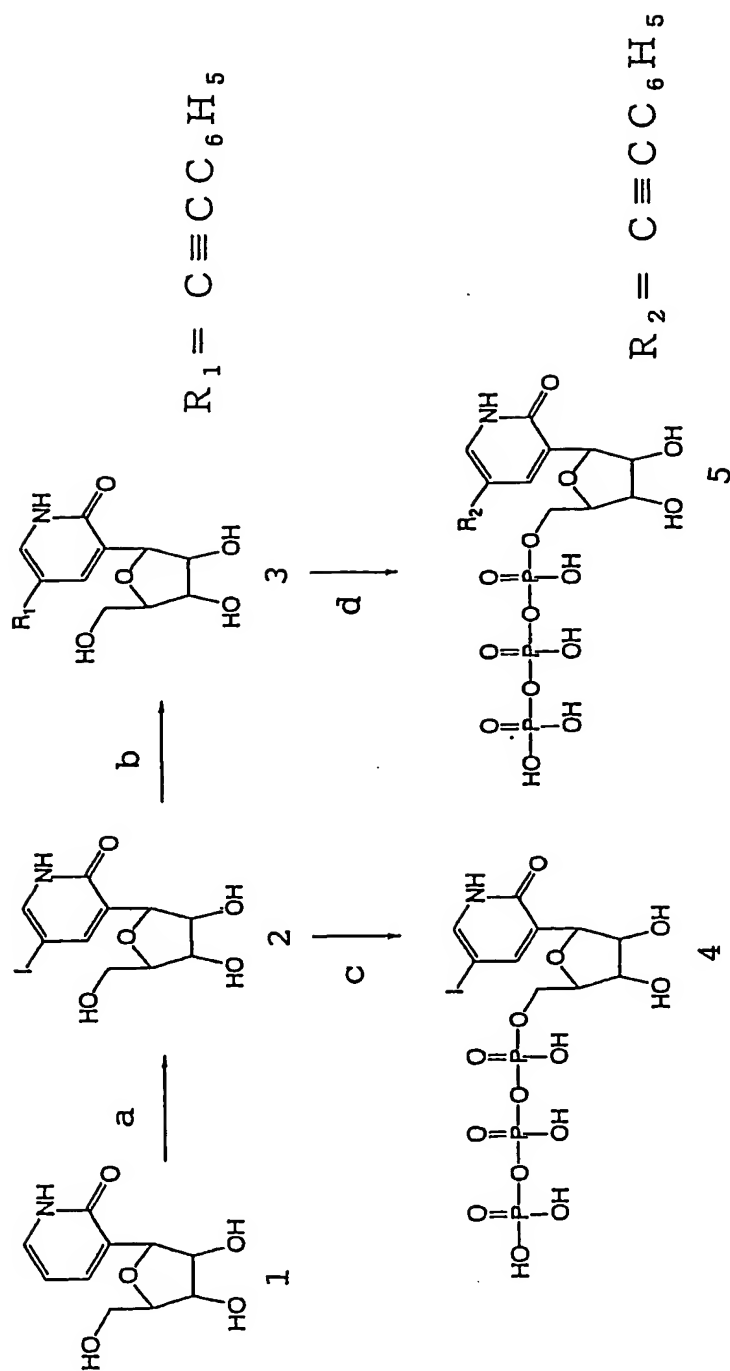
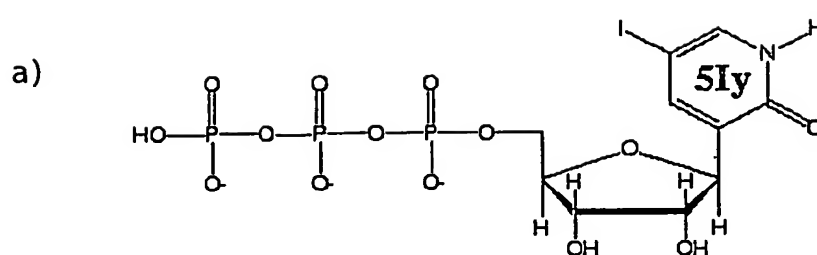


Figure 3



(a) I_2 , KI, Na_2CO_3 , $100^\circ C$, 4h. (b) $CF_3CONHCH_2CCH$, $Pd(Ph_3P)_4$, CuI, Et_3N , DMF, rt, 4-6h.
(c) (1) $POCl_3$, $(CH_3O)_3PO$, $0^\circ C$, 2h. (2) $(n-Bu_3NH)_2P_2O_7$, $0^\circ C$, 10min. (d) (1) $POCl_3$, 1, 8-bis(dimethylamino)naphthalene, $(CH_3O)_3PO$, $0^\circ C$, 2h. (2) $(n-Bu_3NH)_2P_2O_7$, $0^\circ C$, 10min.
(3) conc. NH_4OH , rt, 10h.

Figure 4



b)

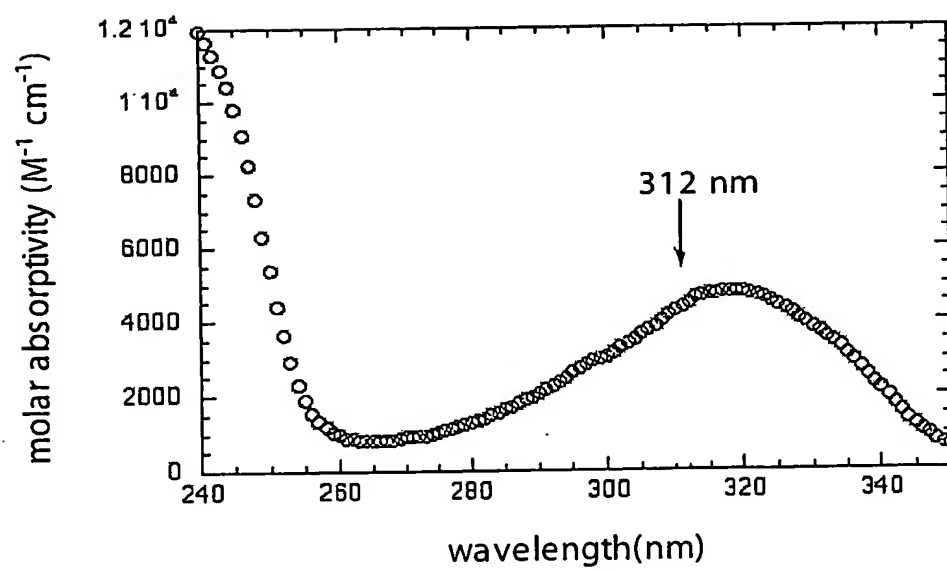


Figure 5

a)

5'-end primer; 39-mer

39.45 : 5' -GGTAATACGACTCACTATAGGGAGTGGAGGAATTCATCG

3'-end primer; 29-mer

29.45 : 5' -GCAGAAGCTTGCTGTCGCTAAGGCATATG

29.45s84 : 5' -GCAGAAGCTTGCTGTCsCTAAGGCATATG

29.45s87 : 5' -GCAGAAGCTTGCTsTCGCTAAGGCATATG

29.45s92 : 5' -GCAGAAGCsTGCTGTCGCTAAGGCATATG

29.45s84/92 : 5' -GCAGAAGCsTGCTGTCsCTAAGGCATATG

b)

5' - GGGAGUGGAG GAAUUCAUCG AGGCAUAUGU CGACUCCGUC UCCCUUCAA
CCAGUUUAUA AUUGGUUUUA GCAUAUGCCU UAGCGACAG C AAGCUUCUGC

Figure 6

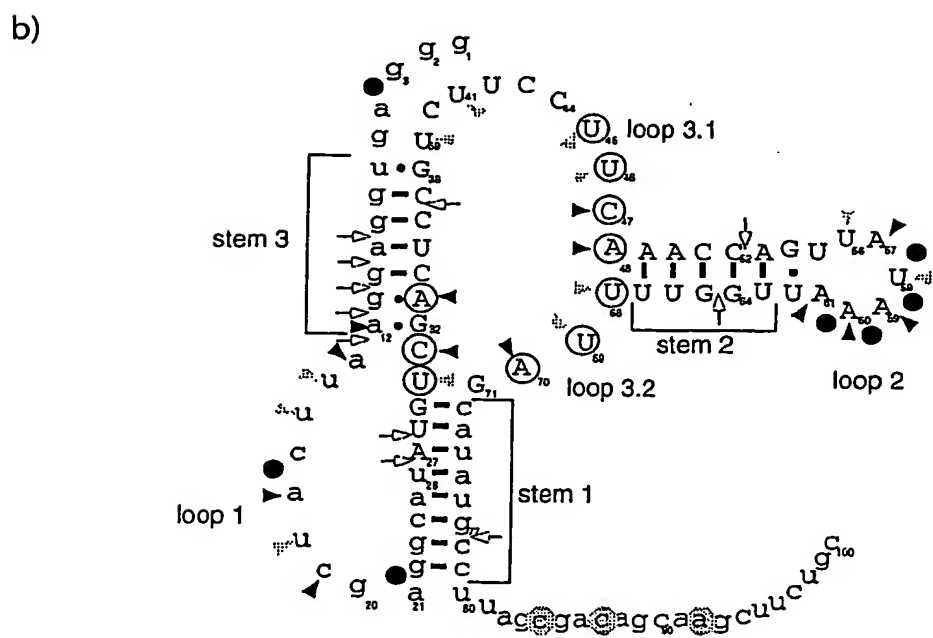
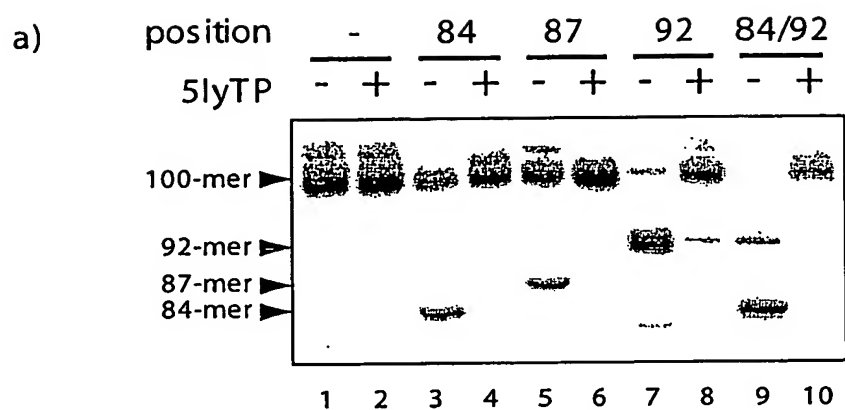


Figure 7

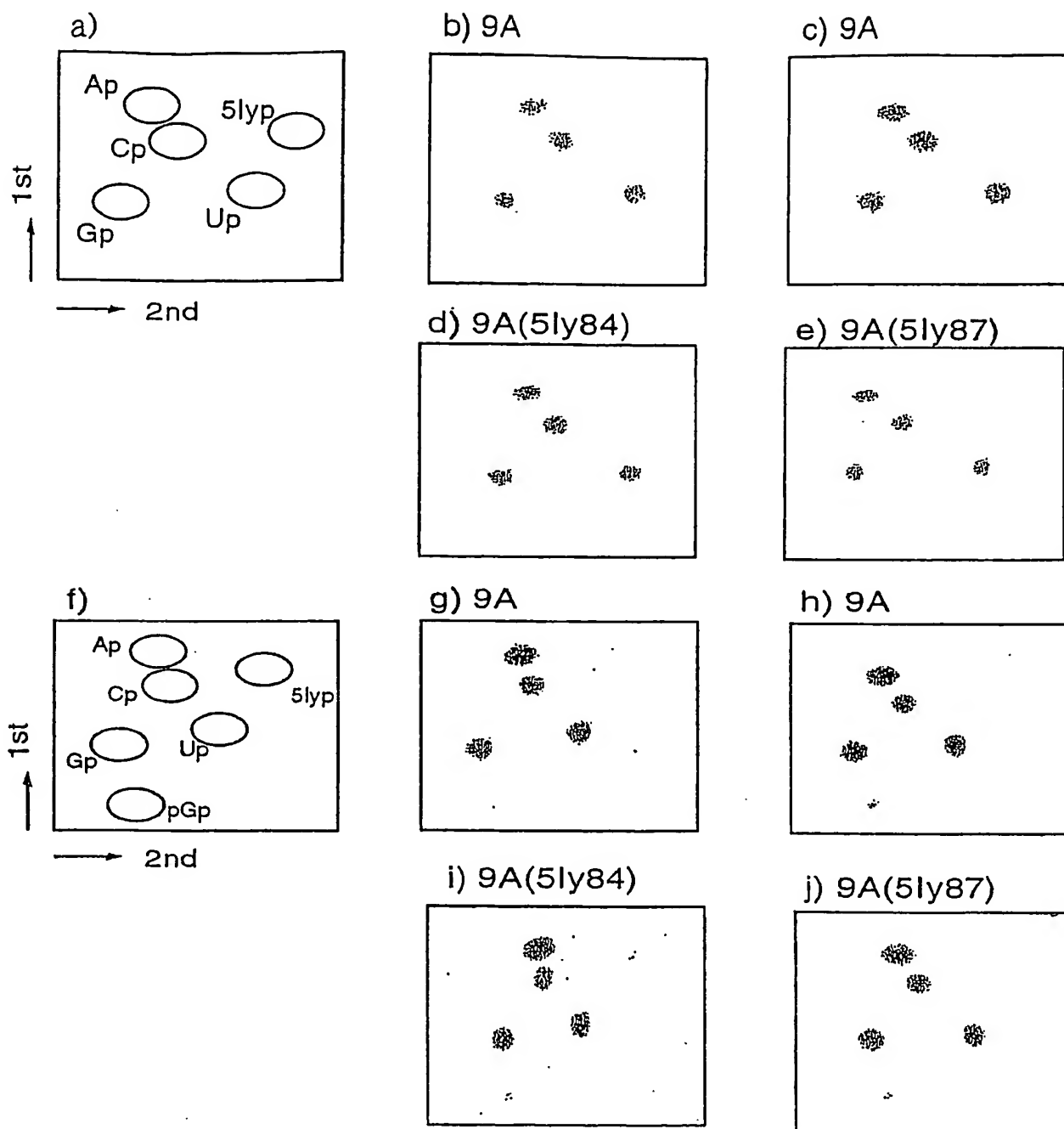


Figure 8

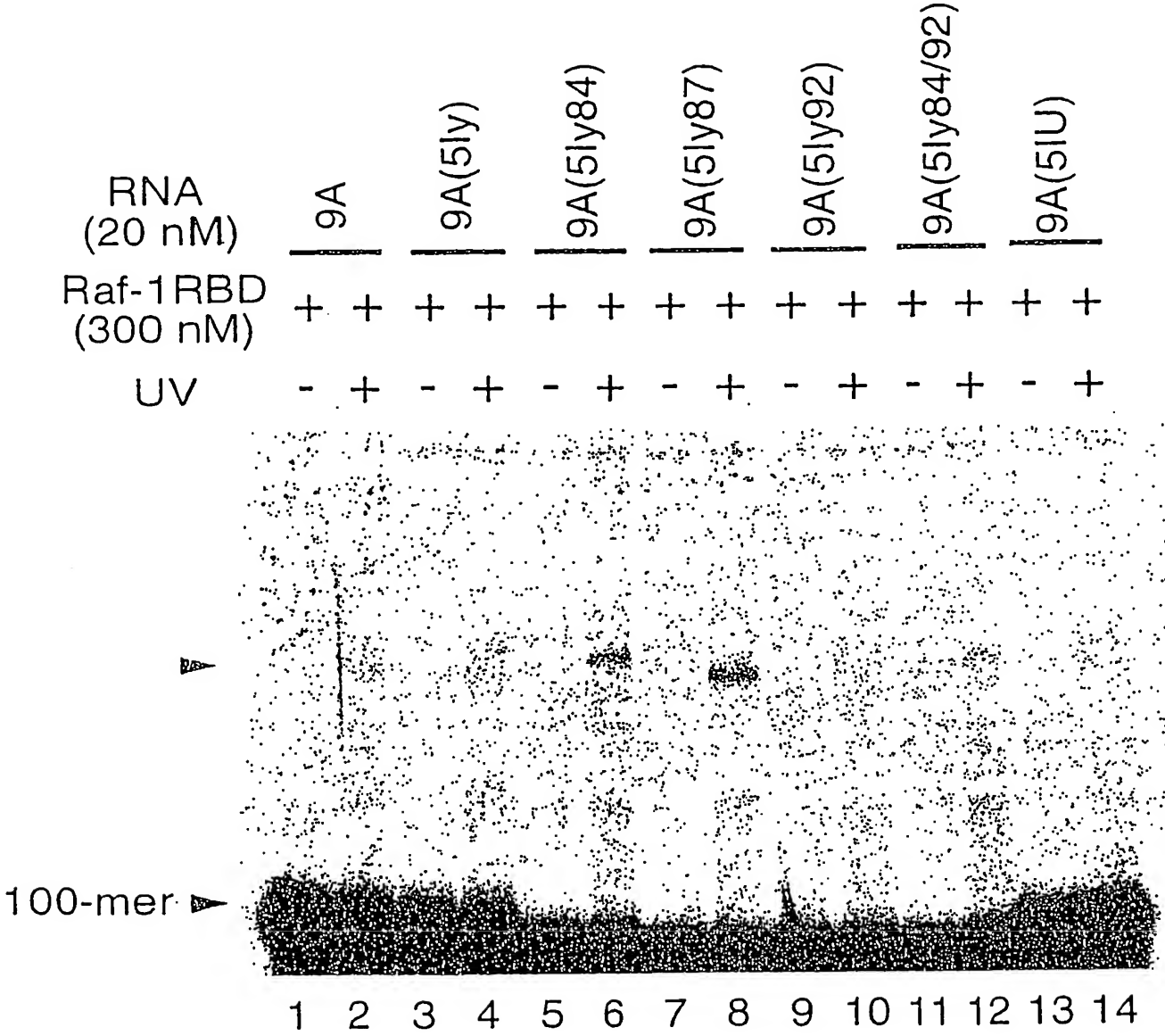


Figure 9

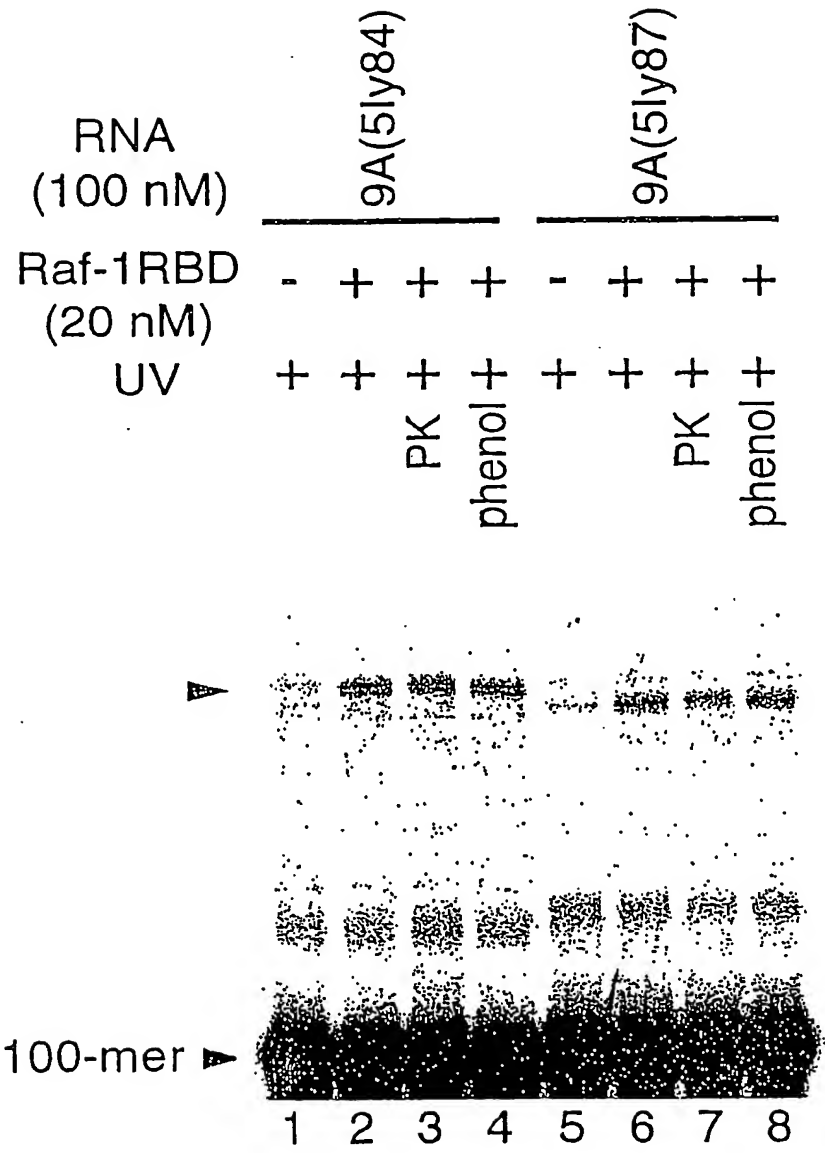
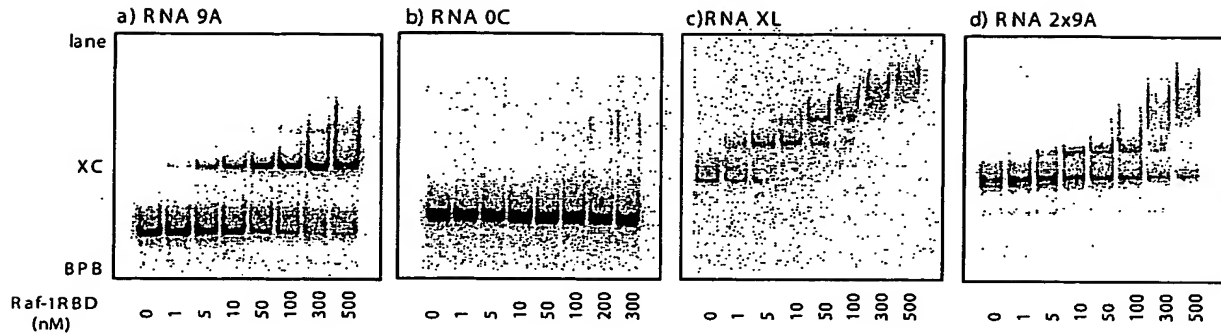


Figure 10



- e) RNA 9A :100-mer
 5' -GGGAGUGGAGGAAUUCaucGAGGCAU [-N45-] CAUAUGCCUAGCGACAGCAAGCUUCUGC-3'
 AUGUCGACUCCGUCUCCUCAAACCAGUUAUAAAUUGGUUUUAG
- RNA 9A(5ly87) :100-mer
 5' -GGGAGUGGAGGAAUUCaucGAGGCAU [-N45-] cauaugccuagcga5IyCAGCAAGCUUCUGC-3'
- RNA 2x9A :200-mer
 5' -GGGAGUGGAGGAAUUCaucGAGGCAU [-N45-] CAUAUGCCUAGCGACAGCAAGCUUCUGC-
 -GGGAGUGGAGGAAUUCaucGAGGCAU [-N45-] CAUAUGCCUAGCGACAGCAAGCUUCUGC-3'
- RNA 0C :100-mer
 5' -GGGAGUGGAGGAAUUCaucGAGGCAU [-N45-] CAUAUGCCUAGCGACAGCAAGCUUCUGC-3'
 CUGGGAACCCUAUCUUGCUUUUGGUAGCUGUAUUCACCGUAAACAG
- RNA XL : cross-linking product generated from two molecules of 9A(5ly87)

Figure 11

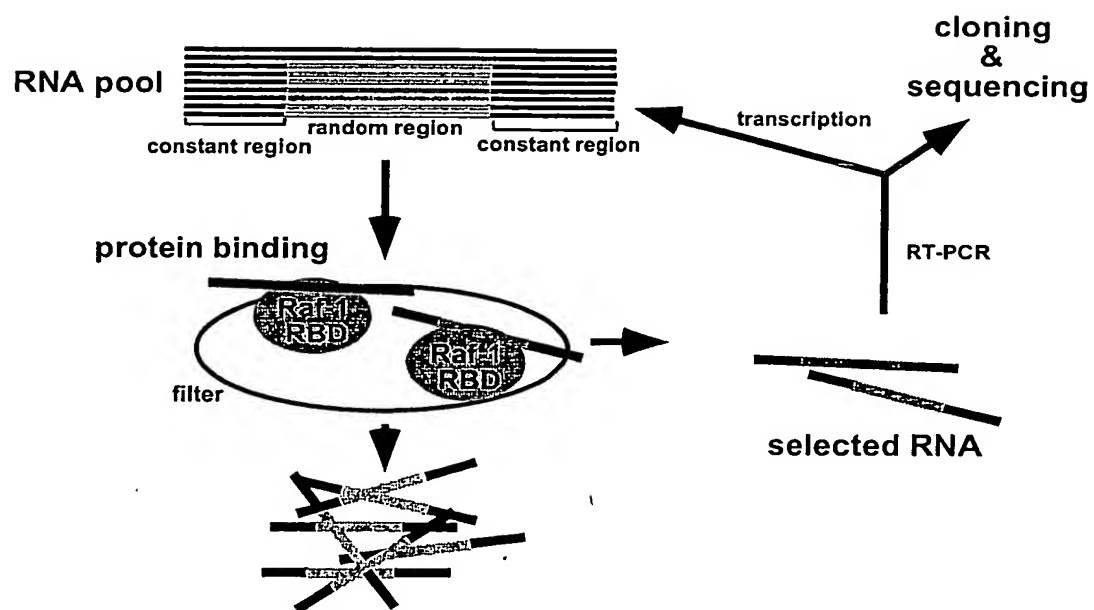


Figure 12

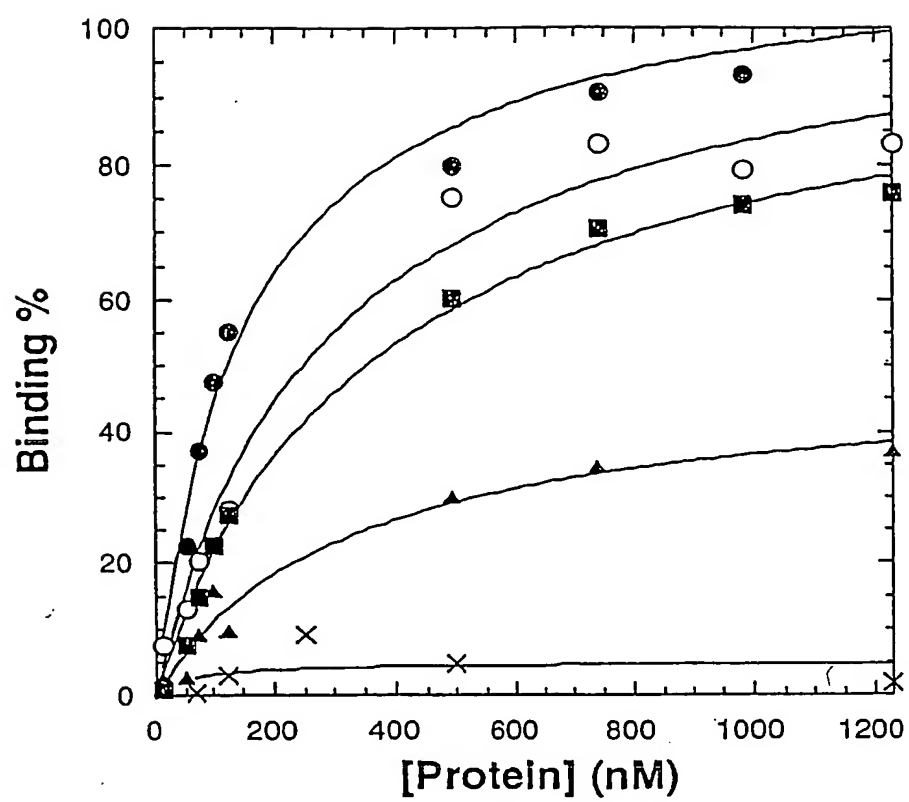


Figure 13

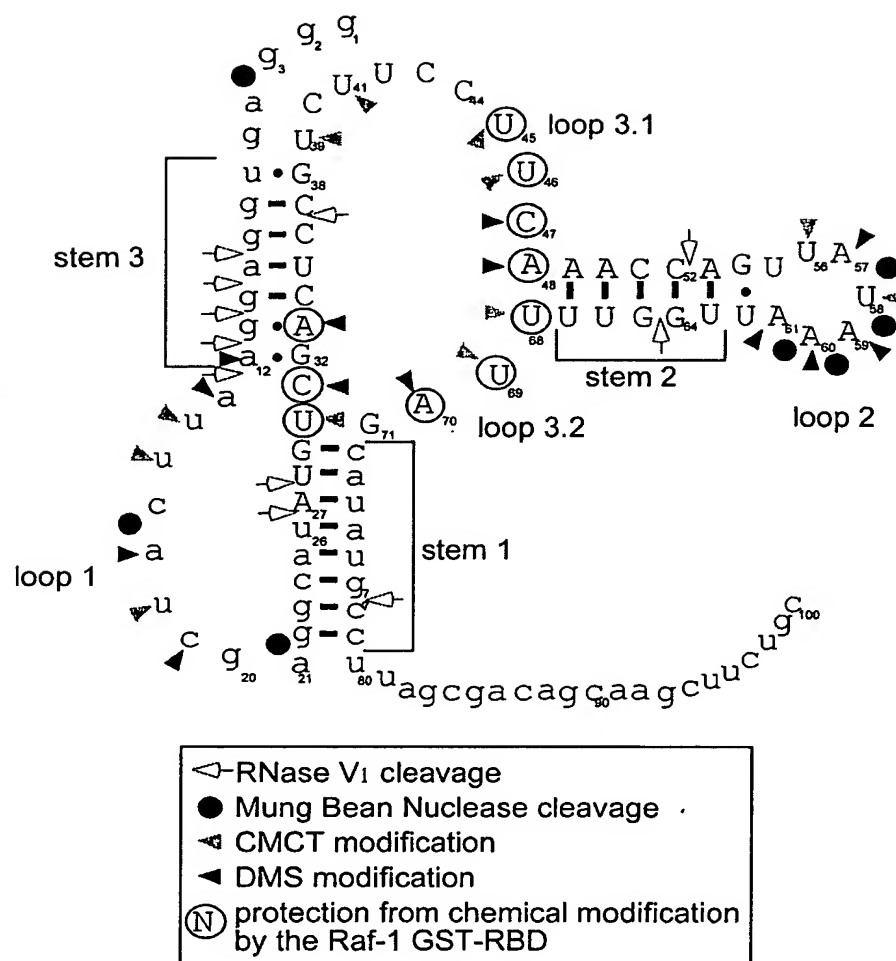


Figure 14

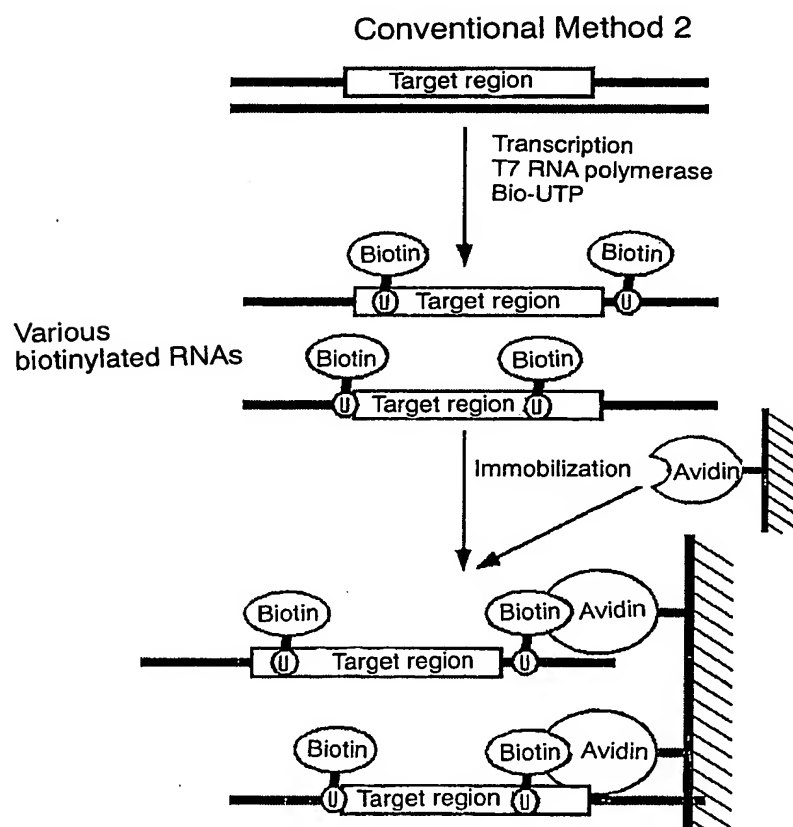
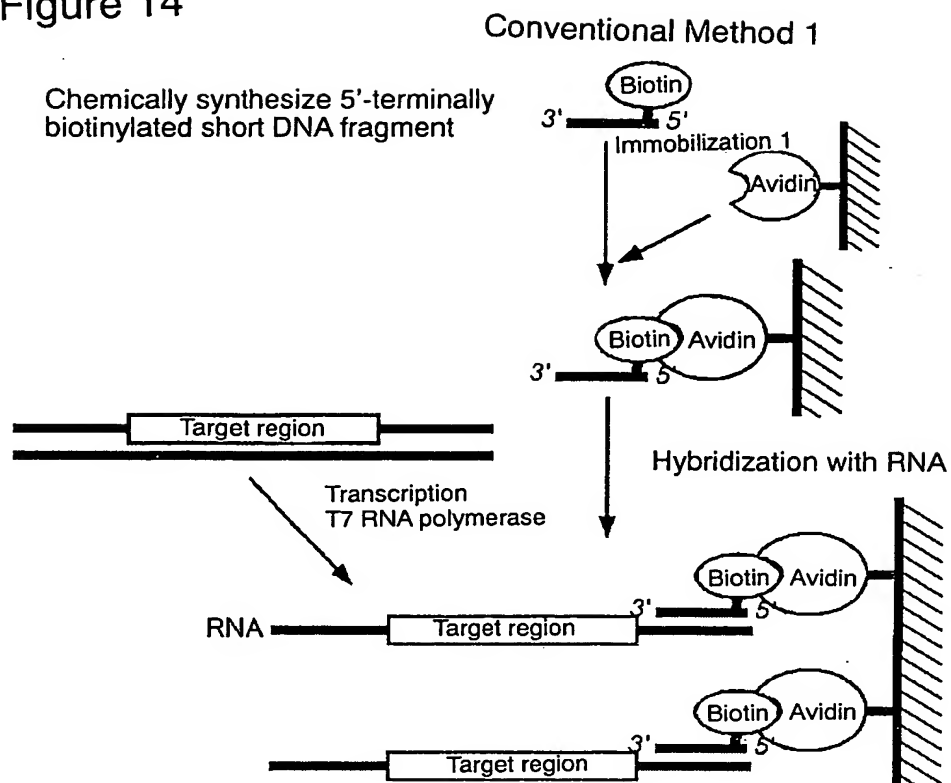
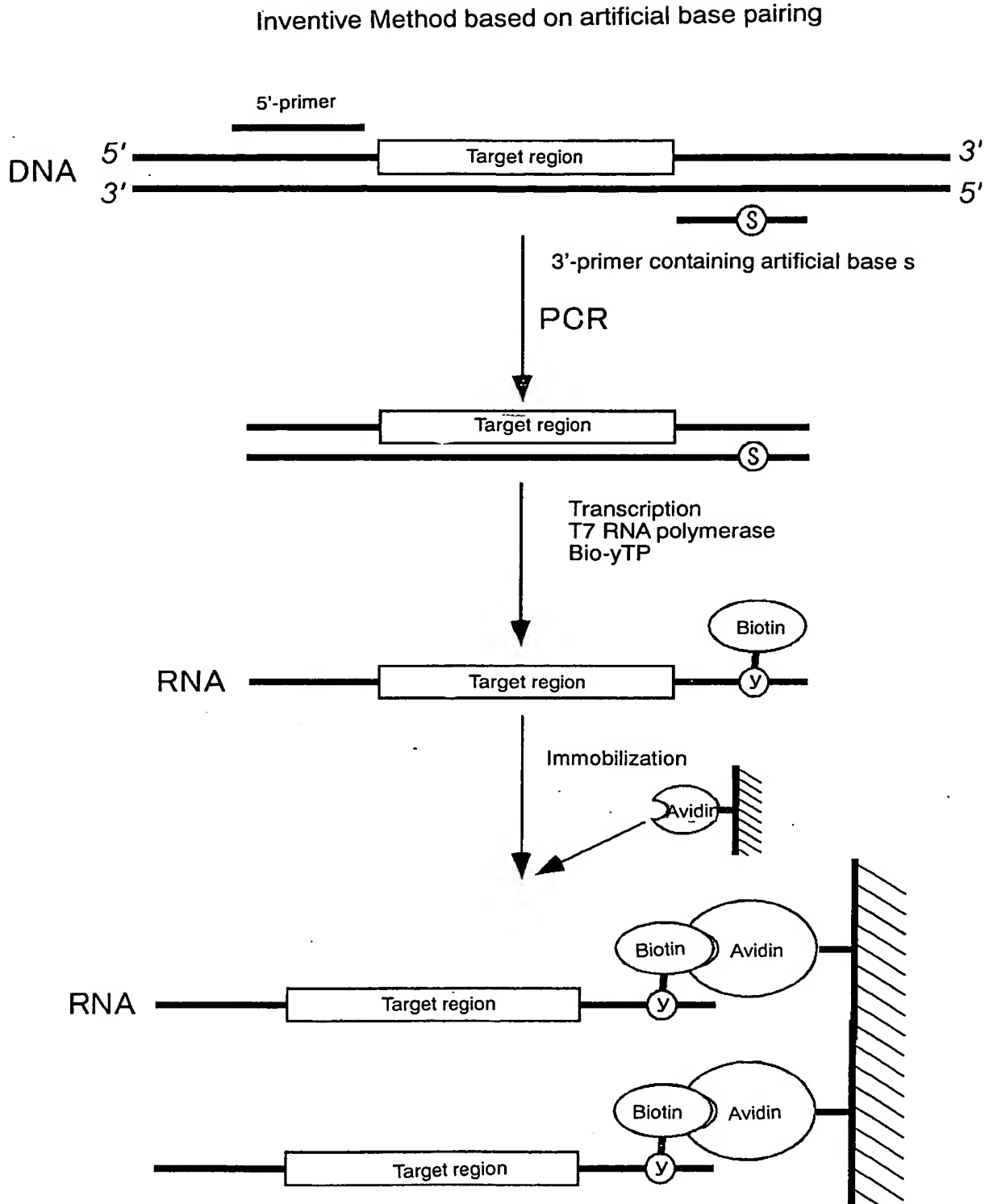


Figure 14 (Continued)



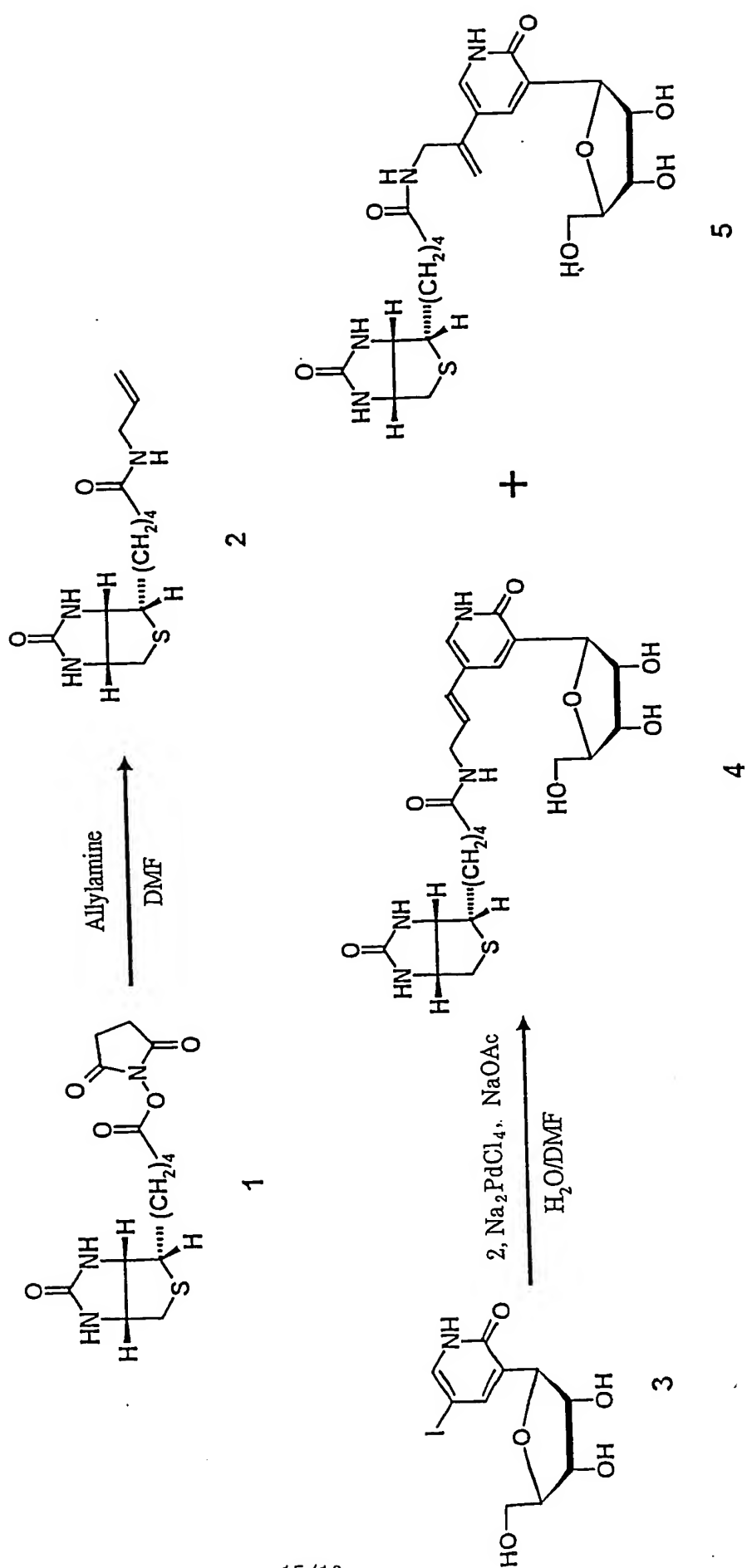
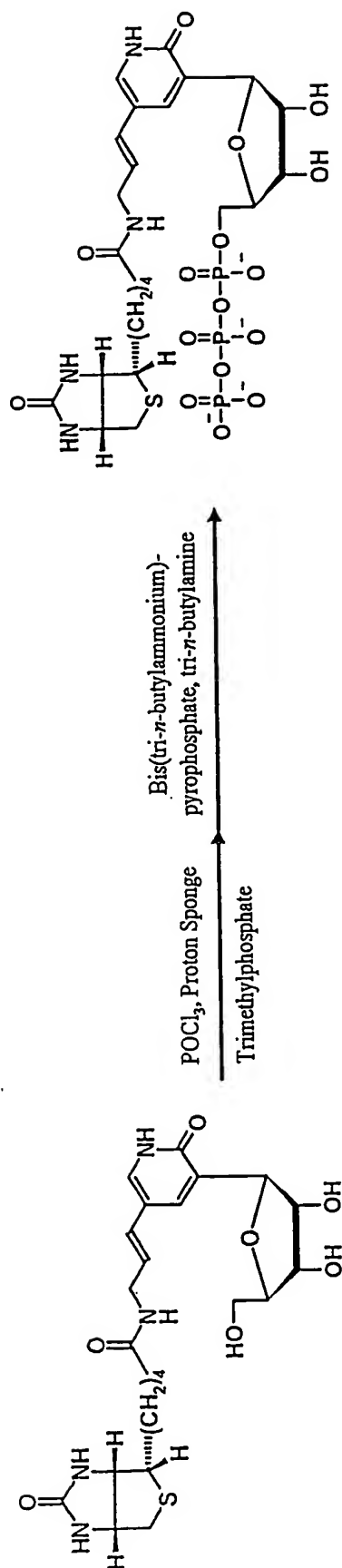
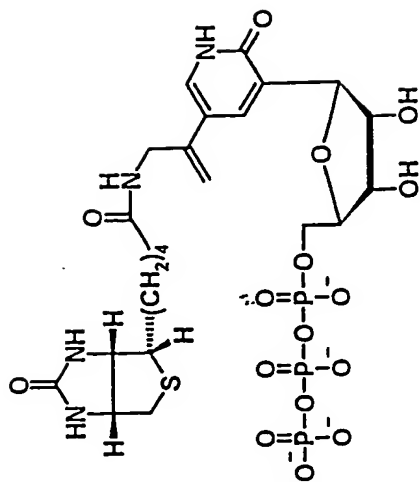


Figure 15



6

4



7

5

Figure 16

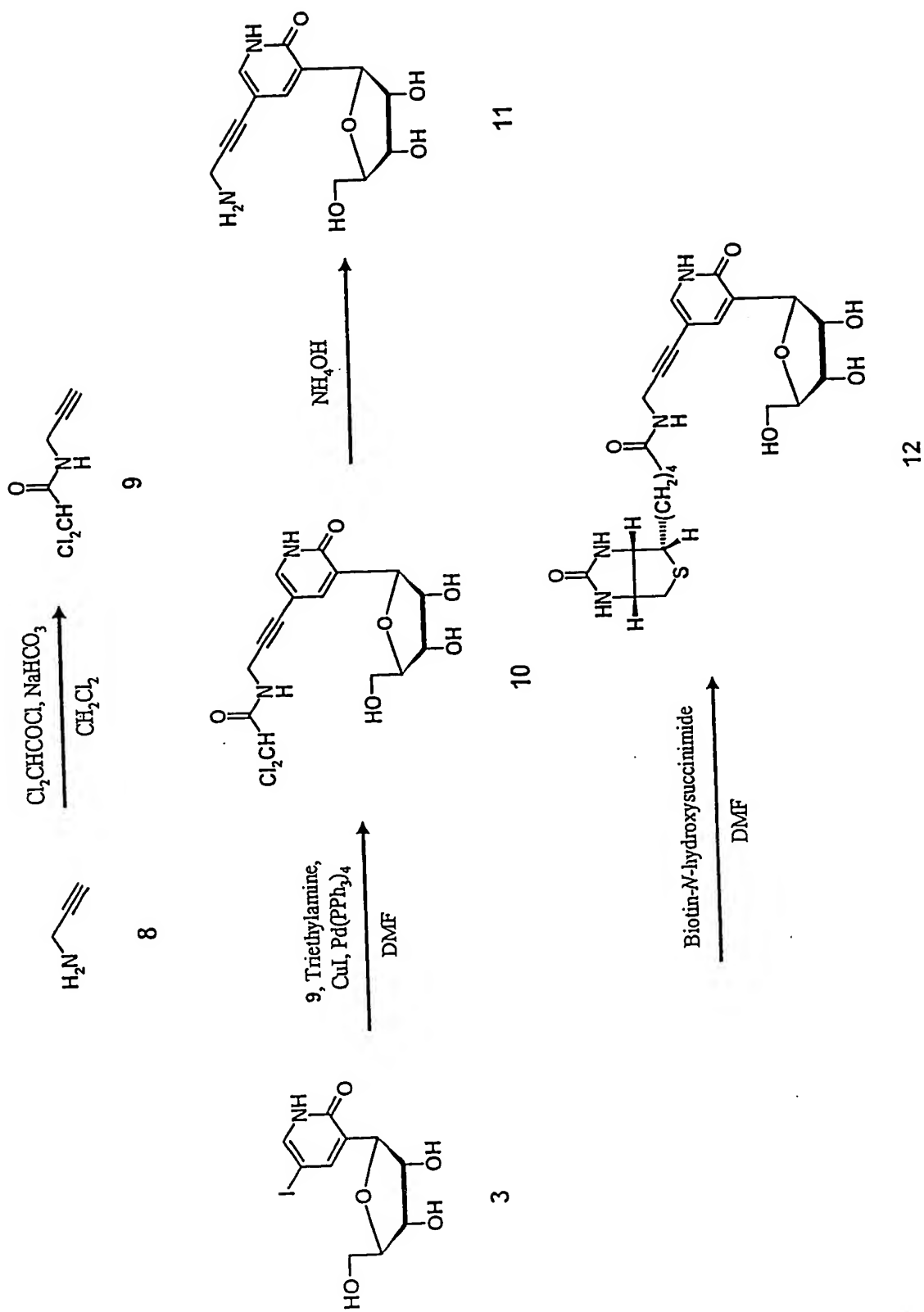
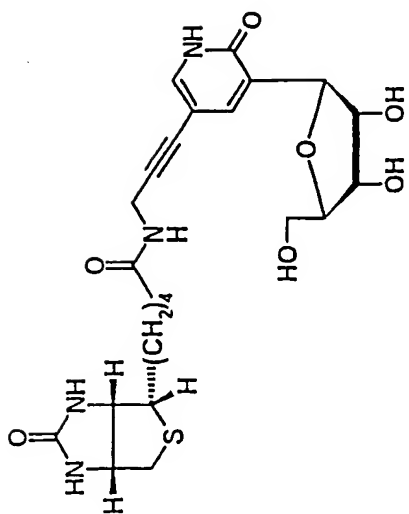
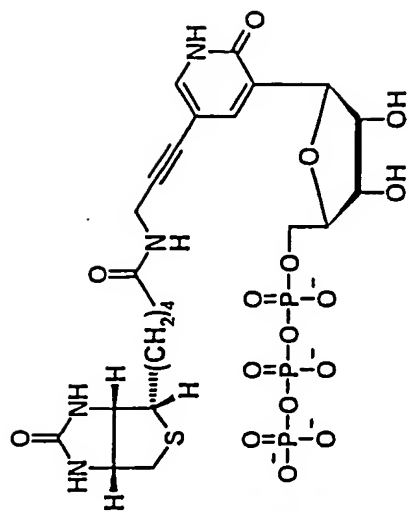
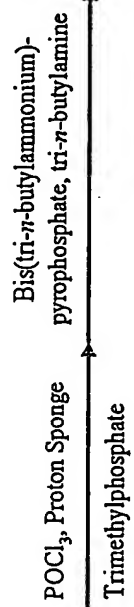


Figure 17



12



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Figure 18

↓ T7 RNA polymerase
1 mM NTPs, [α -³²P]ATP, 10 mM GMP

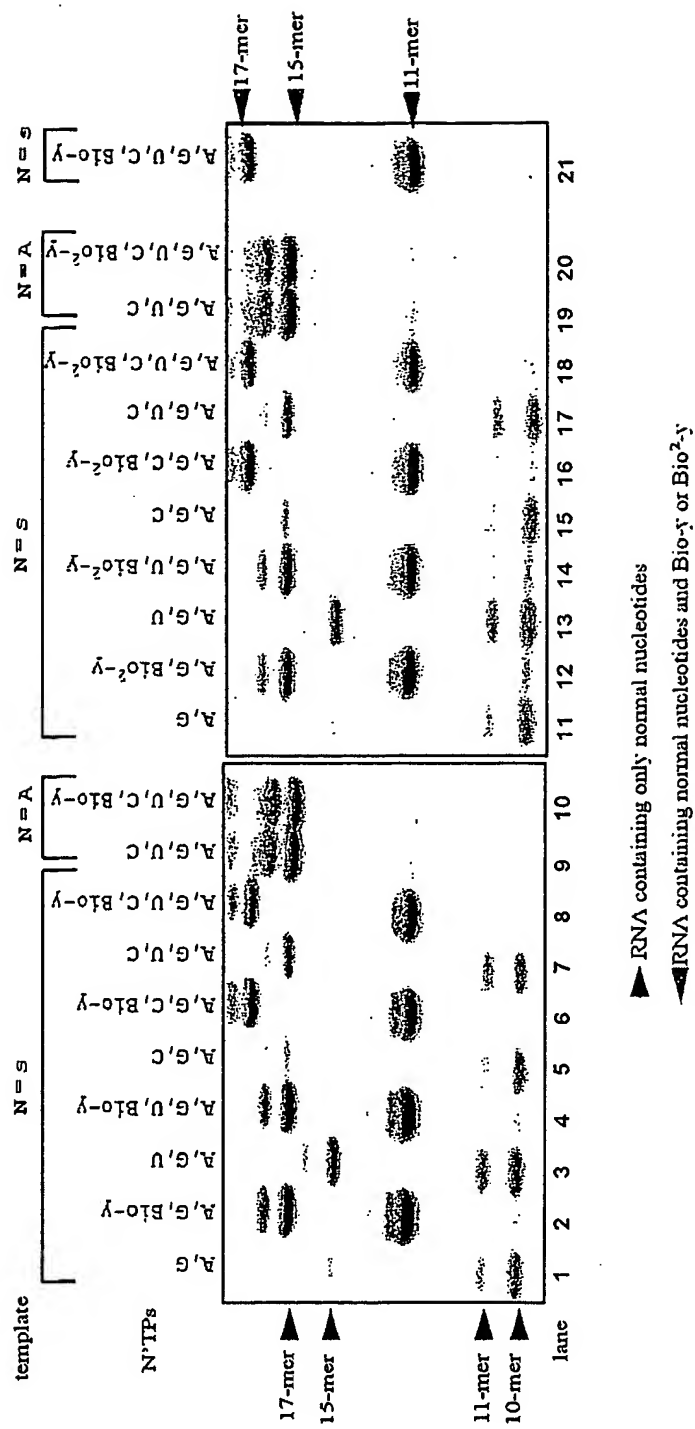


Figure 19